

Claims

1. A check valve, in particular for a high-pressure pump of a fuel injection system for an internal combustion engine, having a valve housing (40), inserted into a receptacle (34), in which housing a pistonlike valve member (60) is guided longitudinally displaceably, which valve member cooperates with a valve seat (48) embodied on the valve housing (40), and the valve member (60) is urged in the closing direction by a prestressed closing spring (70) and in the opening direction by the pressure prevailing in an inlet (44a), and the valve member (60) is inserted into the valve housing (40) from the side of the valve seat (48), characterized in that the valve housing (40) is embodied in one piece; that the valve housing (40) is embodied as cup-shaped and has both a bottom (42) and a jacket region that has a recess (41); that the valve housing (40) points, with the open end of its recess (41), out of the receptacle (34); that the valve seat (48) is located on the bottom (42) of the valve housing (40), facing away from the recess (41); and that the valve member (60) protrudes with a shaft (62) through a bore (44b) in the bottom (42) into the recess (41) in which the closing spring (70) is located.
2. The check valve according to claim 1, characterized in that the closing spring (70) is braced on one side on the inside of the bottom (42), pointing into the recess (41), and on the other on a spring plate (72) connected to the shaft (62) of the valve member (60).
3. The check valve according to claim 1 or 2, characterized in that the recess (41) of the valve housing (40) is closed, on its end facing away from the bottom (42), by a cap (78).
4. The check valve according to claim 3, characterized in that the recess (41) of the valve housing (40) communicates with an inlet region (52) of the check valve (30).
5. The check valve, in particular for a high-pressure pump of a fuel injection system for an internal combustion engine, having a valve housing (40), inserted into a receptacle (34), in

which housing a pistonlike valve member (60) is guided longitudinally displaceably, which valve member cooperates with a valve seat (48) embodied on the valve housing (40), and the valve member (60) is urged in the closing direction by a prestressed closing spring (70) and in the opening direction by the pressure prevailing in an inlet (44a), in particular according to one of the foregoing claims, characterized in that the inlet to the check valve (30) has at least one inlet conduit (50) and preferably a plurality of inlet conduits, extending through the valve housing (40), which discharge in such a way into a bore (44a) surrounding the valve member (60) that the longitudinal axis (51) of the at least one inlet conduit (50) does not intersect the longitudinal axis (45) of the bore (44a) surrounding the valve member (60).

6. The check valve according to claim 5, characterized in that the at least inlet conduit (50) discharges at least approximately at a tangent into the bore (44a) surrounding the valve member (60).

7. The check valve according to claim 5 or 6, characterized in that the at least one inlet conduit (50) has a noncircular cross section.

8. The check valve according to one of claims 5 through 7, characterized in that the valve member (60) has a constriction in its region (66) surrounded by the bore (44a).